

3.1 A.m.

**From:** Corinne Jackson [corinne.jackson@obwb.ca]  
**Sent:** November 3, 2011 4:45 PM  
**To:** corinne.jackson@obwb.ca  
**Subject:** OKANAGAN BASIN WATER BOARD: Board Report; Memo re: proposed "endangered" listing for native mussel  
**Attachments:** Okanagan Basin Water Board Report - November 2011\_FINAL.pdf; Rocky Mtn Ridged Mussel docs 1.pdf

Good afternoon,

Please find attached the Okanagan Basin Water Board's monthly *Board Report*, highlighting some of the important water issues discussed at this week's meeting of the Board of Directors. The monthly report is distributed widely and is intended to provide up-to-date information about the activities, projects, and policies of the Okanagan Basin Water Board.

**IMPORTANT:**

In addition, please find attached a memo regarding the proposed federal listing of the Rocky Mountain ridged mussel (RMRM) as endangered under the Species at Risk Act. The memo was prepared by OBWB Executive Director Anna Warwick Sears for the Board of Directors and includes some background information provided by Department of Fisheries and Oceans. The board passed two motions on this issue.

*"THAT the Okanagan Basin Water Board send a letter to Fisheries and Oceans Canada, along with all other agencies involved and our Okanagan political representatives, recommending against the Species At Risk Act "Endangered" listing of the Rocky Mountain ridged mussel, because of potentially high economic impacts on local governments, potential restrictions on Eurasian watermillfoil control, and potential restrictions on lake level management reducing the flexibility to respond to drought and climate change."*

**CARRIED**

*"THAT the Okanagan Basin Water Board urge Department of Fisheries and Oceans Canada and the Government of Canada to take immediate action against the spread of zebra and quagga mussels into Okanagan lakes."*

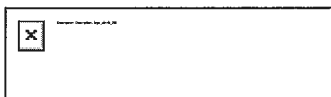
**CARRIED**

We encourage others to provide their own comments on this proposed listing. Comments are due November 30. You can provide comments at: <http://www-comm.pac.dfo-mpo.gc.ca/form/sara-lep/rocky-rocheuses/workbook-cahier-eng.htm>  
For more information, please contact Dr. Warwick Sears at [anna.warwick.sears@obwb.ca](mailto:anna.warwick.sears@obwb.ca).

Best wishes,  
Corinne

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**Okanagan Basin**  
WATER BOARD

## BOARD REPORT: November 3, 2011

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### **OBWB Directors**

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Regional District of Okanagan-  
Similkameen

**Rick Fairbairn - Vice Chair,**  
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**Doug Findlater, Regional**  
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**Graeme James, Regional**  
District of Central Okanagan

**Toby Pike, Water Supply**  
Association of BC

The next regular meeting of the OBWB is tentatively set for **Feb. 7, 2012** to allow time for board appointments following upcoming local government elections.

### **Okanagan Basin Water Board Meeting Highlights**

**Board forwards recommendation protecting Okanagan water interests:** The Water Board will be forwarding a report to the International Joint Commission, resolving concerns regarding the proposed renewal of Operating Orders on Osoyoos Lake. The report, commissioned by the board, addresses concerns on both sides of the border regarding flooding, drought and water for fish flows, while also protecting Canada's right to manage flows in the Canadian portion of the Okanagan Basin. The report and a cover letter will also be sent to Okanagan MPs and Foreign Affairs Canada, ensuring they are aware of the issues.

**Water Board opposes endangered listing of mussel:** Board of Directors will be recommending to Fisheries and Oceans Canada against listing of the native Rocky Mountain ridged mussel as "endangered" under the Species at Risk Act. The board's decision is based on concerns about the potential economic impact to local governments, potential restrictions on OBWB milfoil control, and potential restrictions on lake level management. The board recommends that the federal government take immediate action against the expected spread of non-native and invasive zebra mussels into Okanagan lakes, a known threat to the local mussel, and adopt a more collaborative approach to this subject.

**Slow it. Spread it. Sink it!** The Board received the OBWB's latest public outreach tool - *Slow it. Spread it. Sink it! An Okanagan Homeowner's Guide to Using Rain as a Resource*. The easy-to-use, beautifully-illustrated handbook provides local residents with practical and eco-friendly ways to protect their property and the environment from the effects of rainwater runoff. The guide includes a variety of tips for Okanagan residents, examples of local projects, a list of suitable plants for the Okanagan, and more. The guide is available online at [www.okwaterwise.ca](http://www.okwaterwise.ca) or by calling 250-469-6271.

**OBWB hosts climate change adaptation tools workshop:** In response to requests from local governments in the Okanagan, the Water Board is pleased to be presenting "Keeping up with the climate. Keeping up with Technology: Hands-on training with climate change adaptation tools." The workshop begins with an information session on Nov. 22 in Kelowna and then hands-on training, Nov. 23, in Kelowna and Penticton. The workshop is geared to engineers, planners, and local government consultants. Topics include foreshore protection, stormwater planning, green bylaws and more. For more information visit [www.obwb.ca/toolsworkshop](http://www.obwb.ca/toolsworkshop) or e-mail [melissa.tesche@obwb.ca](mailto:melissa.tesche@obwb.ca).

**Directors reflect on their term serving on the Water Board:** The November board meeting was the last before the Nov. 19 local government elections. With nearly all of the board members up for re-election, directors took a moment to look at past successes and suggestions for future Water Board work.

**For more information, please visit: [www.OBWB.ca](http://www.OBWB.ca)**

## MEMORANDUM

Okanagan Basin Water Board Regular meeting November 1, 2011 Agenda No: 6.1
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File No. 0550.04

To: OBWB Directors

From: Anna Warwick Sears, Executive Director

Date: October 26, 2011

**Subject: Rocky Mountain Ridged Mussel SARA Listing**

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**Summary:** The Department of Fisheries and Oceans is considering an "Endangered" listing for Rocky Mountain Ridged Mussel (RMRM) in the Okanagan, and has requested feedback from OBWB. A preliminary "Recovery Assessment" by DFO is included in this agenda package. The federal Species at Risk Act (SARA) regulations have little flexibility, once the listing occurs. A substantial burden of response will be placed on local government, especially OBWB, but the mitigation actions that would be required at the local level are not likely to make a substantial difference to RMRM recovery.

Very little is known about the biology of RMRM overall, and current management protocols are not thought to be effective. Recovery will only be successful if there are substantial commitments by senior governments to address the primary threats to the species, which are: the potential establishment of invasive zebra and quagga mussels in the Okanagan lake system, and unpermitted foreshore disturbance. The ability to act on these threats is currently within the power and mandate of senior governments regardless of the listing, and these actions are needed in any case to protect the Okanagan ecosystem as a whole.

The specific implications of a SARA listing are unknown, because so little is known about RMRM, the habitats it prefers, and what actions are needed for its recovery. One potential outcome is a restriction on lake level management (draw-down) to prevent exposure of mussel beds. Another potential outcome is a restriction on the areas we will be permitted to rototill milfoil.

An "Endangered" listing could accrue significant costs to OBWB (in the hundreds of thousands of dollars), and potentially affect our ability to manage milfoil, without substantially changing RMRMs chance of survival. Current senior government legislation (if acted on) is sufficient to prevent the main risks to RMRM (i.e., zebra mussels and habitat disturbance).

The OBWB's role is to consider the health of the lake system in a time of environmental change and difficult decisions, and to direct attention to actions that bring the greatest overall benefit.

Based on the information presented thus far, I cannot recommend that the OBWB support a listing of "Endangered" under SARA for RMRM. We have been asked to provide our comments, including an estimate of economic impacts, by November 30, 2011. The OBWB can give long-term support to RMRM recovery by continuing our active commitment to ecosystem health, protection, and restoration – working in partnership with local and senior governments under existing legislation.

If public funds are a limiting factor, the Government of Canada should focus on preventing the spread of zebra and quagga mussels to the Okanagan valley. Zebra and quagga mussels are by far

the greatest threat to the health of Okanagan lakes, to biodiversity of native species (including RMRM and local salmon), and will far and away result in the greatest economic costs to all levels of government.

**Recommended motion:** *That the Okanagan Basin Water Board urge DFO and the Government of Canada to take immediate action against the spread of zebra and quagga mussels into Okanagan lakes.*





## RECOVERY POTENTIAL ASSESSMENT FOR ROCKY MOUNTAIN RIDGED MUSSEL (*GONIDEA ANGULATA*) IN BRITISH COLUMBIA



Figure 1. *Gonidea angulata* at Dog Beach, Okanagan Lake in Summerland, July 2009. Note the prominent posterior ridge. (Photo by L. Stanton).

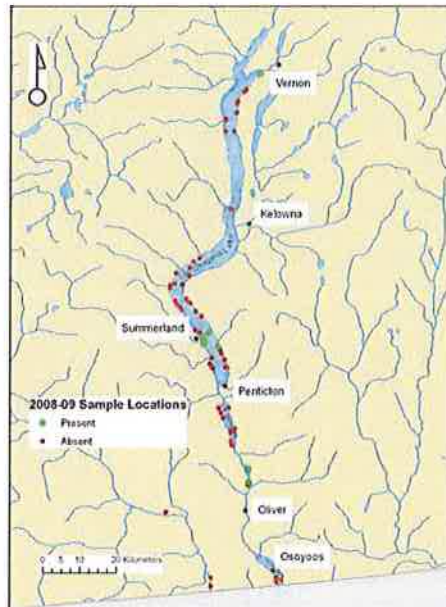


Figure 2. *Gonidea angulata* survey locations conducted from 2008-2009 within the Okanagan Basin.

### Context :

The Rocky Mountain ridged mussel (RMRM, *Gonidea angulata*) is a freshwater bivalve mollusc that reaches the northern extent of its global distribution in southern British Columbia. In May 2010 the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed this species as Endangered. Current Fisheries and Oceans Canada (DFO) practice is to undertake a recovery potential assessment when a species is assessed as Endangered or Threatened. RMRM is presently restricted to the Okanagan Basin with small aggregations present in the northeast and southwest areas of Okanagan Lake, in addition to a few individuals encountered in Vaseaux Lake and the Okanagan River. Potential or known threats and their impacts to habitat such as channelization of the Okanagan River, dams and weirs, development of shoreline and littoral zones, pollutants, introduced species such as Eurasian watermilfoil and dreissenid mussels, are evaluated and mitigation measures were recommended. Recommendations for future research are provided in an attempt to fill knowledge gaps and to meet recovery objectives to sustain viable populations and prevent extirpation of the Rocky Mountain ridged mussel in Canada.

This Science Advisory Report has resulted from a Fisheries and Oceans Canada, Canadian Science Advisory Secretariat regional advisory meeting of February 25, 2011 on Recovery Potential Assessment (RPA) of Rocky Mountain Ridged Mussel (*Gonidea Angulata*) in British Columbia. Additional publications from this process will be posted as they become available on the DFO Science Advisory Schedule at <http://www.dfo-mpo.gc.ca/csas-sccs/index-eng.htm>.

## SUMMARY

- The Rocky Mountain ridged mussel (RMRM) was originally designated as a species of special concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and under the Canadian Species at Risk Act (SARA) in 2003. In 2010, it was re-assessed by COSEWIC, and based on recent population trends, identified past impacts, ongoing and future potential threats, it was designated Endangered.
- The completion of a Recovery Potential Assessment (RPA) is required to inform the SARA listing decision, and provides the scientific background, identification of threats and probability of recovery of a species.
- Data from recent surveys show that RMRM is sporadically distributed and limited to the Okanagan Basin. In addition, limited information on the population and size structure, with little evidence of recruitment, indicates the species is in decline and at risk of extirpation.
- There is very little known about the specific life history parameters for RMRM, or its ecosystem role, specific micro-habitat requirements and preferences, confirmed glochidia fish host species and limiting factors to recruitment.
- Identified habitat pressures and threats include: channelization of the Okanagan River; dams and weirs; development of shoreline and littoral zone; pollutants; other introduced species, and the potential threat of dreissenid mussels.
- Ongoing or planned mitigation measures include: improvement of water quality; managing Okanagan Lake levels, and possibly the Okanagan River Restoration Initiative.
- Protocols and guidelines are needed to assess the impacts of continuing habitat pressures for consistent protection of the functional habitat characteristics of mussel habitat as well as potential glochidia host fish habitat.
- Allowable harm activities provide the required biological information required to increase productivity and survival should be restricted to areas of greatest abundance at a level that is comparable to natural mortality (which needs to be determined).
- Expected population trajectories associated with specific scenarios are outlined including extirpation, stabilizing existing populations, and expanding populations to previously occupied habitats in the Okanagan Basin.
- Recommendations are made for research activities to provide specific biological information needed for a sound management plan to reverse the decline and ensure the persistence of stable self-sustaining RMRM populations.



## COSEWIC Assessment Summary

### Assessment Summary – November 2010

**Common name**

Rocky Mountain Ridged Mussel

**Scientific name**

*Gonidea angulata*

**Status**

Endangered

**Reason for designation**

This mussel, one of only a few species of freshwater mussel in British Columbia, is restricted in Canada to the Okanagan basin. Historically, channelization and water regulation in the Okanagan River have affected mussel beds and caused population reduction. Additional sites have been found since the original COSEWIC assessment (2003). Currently, Zebra and Quagga (dreissenid) Mussels are the most serious potential threat to the native mussel. Dreissenid mussels have had devastating effects on native unionid communities elsewhere, such as in the Great Lakes region. A recent assessment of the sensitivity of the Okanagan basin to dreissenid mussels demonstrated that the latter could spread quickly and establish intense infestation on native mussels once introduced. Within the foreseeable future, the introduction of dreissenids into the Okanagan basin is likely because they can survive for days out of water and are known to be transported between water bodies on trailered watercrafts; dreissenid mussels have been intercepted on trailered boats heading to British Columbia in recent years. Ongoing foreshore and riparian development, and some methods of control of invasive Eurasian Watermilfoil, reduces habitat and affects water quality.

**Occurrence**

British Columbia

**Status history**

Designated Special Concern in November 2003. Status re-examined and designated Endangered in November 2010.



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Canada

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## Rocky Mountain Ridged Mussel Consultations

### DFO needs your opinion!

Every year an independent group of scientific experts (the Committee on the Status of Endangered Wildlife of Canada or **COSEWIC**) identifies wildlife species they consider to be at risk which may suffer further decline without assistance. COSEWIC takes into consideration biological factors in their species assessments.

Levels of risk vary from **Special Concern** (a wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats), **Threatened** (a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction), and **Endangered** (a wildlife species that is facing imminent extirpation or extinction) to **Extirpated** (a wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the world). COSEWIC assessments are then considered by the Government of Canada in making listing decisions under the *Species at Risk Act* (**SARA**).

It is the responsibility of the Minister of Environment, in consultation with the Minister of Fisheries and Oceans, to determine whether to "**legally list**" these species under SARA. For species identified as *Endangered*, *Threatened* or *Extirpated*, a **SARA** listing immediately protects them from a number of human actions, including killing, harming, capturing, buying and selling, and initiates recovery efforts. For species identified as *Special Concern*, SARA listing requires the development of a management plan to maintain a sustainable population. Since listing a species may have economic and social costs to some Canadians, the government consults with First Nations, stakeholders and other groups as part of their decision-making process.

Rocky Mountain Ridged Mussel (*Gonidea angulata*) was listed as Special Concern in 2005 on Schedule 1 of SARA. This species has been recently re-assessed by COSEWIC as being "Endangered." The Rocky Mountain Ridged Mussel is a freshwater bivalve mollusc whose distribution in Canada is presently restricted to the Okanagan Basin. Potential or known threats to this species include channelization of the Okanagan River, dams and weirs, shoreline development, pollutants and invasive species.

We are seeking your opinions, ideas, knowledge and advice on this species. Specifically, we would like to know if you support listing of the Rocky Mountain Ridged Mussel as Endangered under SARA. Listing this species as Endangered would mean that a Recovery Strategy would be developed and that recovery measures will be carried out to help manage this species and its habitat. All comments received will be taken into consideration in DFO's listing recommendation which informs the final listing decision.

The following questions are a guide only - please complete as many sections as you wish. You may also offer additional comments in the spaces provided, especially those regarding the impacts that would result from listing or not listing this species. Thank you for your interest and participation.

NOTE: Information provided in the comment forms may be made available to the public if requested through the *Access to Information and Privacy* (ATIP) process.